

## A NEW LENS ON THE WORLD

### Windsor Central Supervisory Union, Woodstock, Vermont

*"Sight is a faculty, seeing is an art."* George Perkins Marsh



This simple, yet profound, quote was the challenge given to 6th graders and some 5th graders from all six elementary schools in the Windsor Central Supervisory Union. Eighty-one students gathered for four days this fall at the Marsh-Billings-Rockefeller National Historical Park to explore how lenses expand our knowledge of the Universe. They used microscopes, hand lenses, cameras and telescopic images to examine and better understand the

"pieces, patterns, and processes" of how our world functions, from the microscopic to the cosmic scale. Students discovered the vastness in a drop of water, the pinprick size of Earth in Space, and the curious similarities and differences between these worlds.

Sam Mitchell, a fifth grader from Reading, noted, "I loved Cosmic Scales this week. My eyes see the world differently. It has taught me to open my eyes to things I would usually not pay attention to. What I liked most was that it left me with questions that will stay with me for a long time."

To create this unique learning experience, teachers from Barnard, Reading, Pomfret, Killington, Bridgewater and Woodstock, led by Forest for Every Classroom (FFEC) teacher, Rob Hanson, spent face-to-face and online time planning and collaborating so students could benefit from their combined areas of expertise.

One such learning experience was facilitated by fifth and sixth grade teachers, Patty Collins (Reading Elementary School) and Nancy Boymer (Barnard Academy), as they set up field microscopes by the Pogue to help students investigate how biotic and abiotic matter interacted at very minute levels. Comments such as "The colors of this spirogyra are amazing!" or "Check out the shape of this heliozoa!" were plentiful.

Another full-day activity was led by Trail to Every Classroom (TTEC) teacher, Ms. Lisa Kaija who taught students about art in nature and how to use the lens of a camera to consider objects from different angles, letting them see things they had never noticed before on the human scale. They analyzed how changing one part of a system—a color, shape, size or texture—could create a totally different composition.

Sixth grade teachers, Jill Kurash (Woodstock) and Corinna Dooley (Bridgewater), hiked with students to the top of a small mountain. From this vantage point, looking

down on the village of Woodstock, they saw the daily comings and goings of the bustling fall tourist season from a very different perspective. The students wrote in their journals, reflecting on their own interconnectedness with their surroundings and sense of place, and created skits to dramatize different aspects of stewardship.

Aided by an impressive array of photos taken by former students, Rob Hanson and student teacher Krystal Waite, did not hesitate to stretch the students' minds to the edge of the Universe. Using a combination of kid-friendly software and a solar telescope, students studied celestial bodies that have captured the imagination of humans for thousands of years. From the sounds of the "whoaaa's," the wonders of our Universe will continue to be appreciated and pondered for at least another generation.

All of the teachers continued to investigate these topics when they returned to the classroom. Patty Collins taught the other teachers how to use the powerful microscope nicknamed "Anton" to take microscopic photos with their students. Rob Hanson worked with each of the teachers to set up a special stargazing lesson for their students, so that students could observe the stars at night and use the Horizon's Laboratory to take photos. Lisa Kaija partnered with Artistree art gallery and organized the microscopic, human, and cosmic scale photos for an exciting multi-class exhibit. The images are now part of the display at the Marsh-Billings Rockefeller National Historical Park.

Claire Coates, a Pomfret 6th grader, summed the experience up nicely when she wrote "The experience was really fun because we got to learn what it would be like to be a planet looking out on the black ocean of space, or a tiny microscopic organism living in a 'huge' world that to us is only a drop of water. We got the chance to look from a different point of view and become sucked into that world for a day. Thank you for letting us students discover a different perspective and remember that we are small and big, you just have to think about it."